Tuesday, December 9 and Wednesday, December 10, 2008 Savannah, Georgia

Chairman Earl Chilton called the meeting to order at 8:30 am. The meeting began with introductions of the Panel members and guests. The following were in attendance:

Members and Proxies

James Ballard, GSMFC, Ocean Springs, MS

Mike Brainard, MDMR, Biloxi, MS

Paul Carangelo, Port of Corpus Christi Authority, Corpus Christi, TX

Earl Chilton, TPWD, Austin, TX

Leslie Hartman, TPWD, Palacios, TX

Dewayne Hollin, Texas Sea Grant, College Station, TX

Tom Jackson, NOAA-Fisheries, Miami, FL

Chuck Jacoby, University of Florida/Florida Sea Grant, Gainesville, FL

David Knott, SCDNR, Charleston, SC

Herb Kumpf, At-Large Member, Panama City Beach, FL

Jon Lane, US Army Corps of Engineers, Jacksonville, FL

Isis Longo, LDWF, Baton Rouge, LA

Susan McCarthy, FDA, Dauphin Island, AL

Roberto Mendoza, Universidad Autónoma de Nuevo Leon, Mexico

James Morris, NOAA, Beaufort, NC

Trish Murphey, NCDMF, Morehead City, NC

Martin O'Connell, UNO, New Orleans, LA

Marilyn Barrett O'Leary, At-Large Member, Baton Rouge, LA

Harriet Perry, GCRL, Ocean Springs, MS

Bob Pitman, USFWS, Albuquerque, NM

Dennis Riecke, MDWFP, Jackson, MS

Don Schmitz, FDEP, Tallahassee, FL

John Teem, FL Dept. of Agriculture and Consumer Services, Tallahassee, FL

Keith Weaver, GDNR, Social Circle, GA

Staff

Nancy K. Marcellus, GSMFC, Ocean Springs, MS

Others

Andy Goodwin, University of Arkansas at Pine Bluff, Pine Bluff, AR

Denise Gregoire, US Geological Survey, Gainesville, FL

Dane Huge, USGS, Gainesville, FL

Pamela J. Schofield, US Geological Survey, Gainesville, FL

George Selberg, Gray's Reef National Marine Sanctuary, Savannah, GA

Page -2-

Public Comment

Chilton provided the opportunity for public comment. George Selberg from Gray's Reef National Marine Sanctuary in Savannah, Georgia commented on three invasive species found at Gray's Sanctuary and their concerns.

Review and Adoption of Agenda

With minor changes made to presentation times, Herb Kumpf made a motion to adopt the agenda. Chuck Jacoby seconded the motion and the agenda was adopted.

Review and Approval of Minutes

Paul Carangelo made a motion to approve the minutes from the April 22-23, 2008 meeting held in San Antonio, Texas. David Knott seconded the motion and the minutes were approved.

Synopsis of the Rat Lung Worm Study

John Teem provided a PowerPoint presentation "Human Health Risks Associated with Channeled Apple Snails in the GSARP Region" to discuss the parasite, *Angiostrongylus cantonesis*. The life cycle of *A. cantonesis* requires infection of a rat host in addition to a snail host. The predominant channeled apple snail in the GSARP region is *Pomacea insularum*.

Assessing the Heath Risks Associated with Channeled Apple Snails in the GSARP Region:

- Collect apple snails from New Orleans and Miami, send samples to the CDC in Atlanta to assay for the presence of the rat lung worm using DNA-based detection assays (PCR).
- Develop an in-house capacity to detect the rat lung worm using PCR. Test channeled apple snails from a third location (to be determined).
- Develop a mathematical model to predict the spread of channeled apple snails.

PCR Detection of Rat Lung Worm in Infected Snails:

- Miami: 60 analyzed, all negative
- New Orleans: 60 analyzed, 5 positives.

Mathematical Model Objectives:

- Create partial differential equations that model the diffusion of a species over time through a spatial domain.
- Create a grid of polygons representing the spatial domain, in which each polygon represents a geographic area with specific properties related to the diffusion of the species.
- Model the diffusion of the species through the grid, calibrating the diffusion rate with experimental data.
- Generate new grids using existing GIS data maps.

Page -3-

Model the effects of biocontrol efforts on spread.

Conclusions:

- Five snails from New Orleans were found to be positive for rat lung worm.
- No samples were positive for the parasite in snails taken from Miami, Florida or Picayune, Mississippi. However, both sites had previously had cases of infected paratenic hosts (a gibbon and a horse, respectively).
- Samples from Texas and Everglades National Park still pending.
- Results thus far suggest that rat lung worm infections of channeled apple snails are not widespread throughout the GSARP region.

Eradication Strategy for Channeled Apple Snails Using Sterile Releases

John Teem presented a PowerPoint presentation entitled "Thinking Outside \land back inside the Box - Applying \lor old New Technology to the Eradication of Invasive Species".

Sterile Insect Technique:

- Devised by Knipling in 1950's as a means to eradicate pest insects.
- Used to control a variety of agricultural insect pests.
 - screw worms eradicated from the island of Curacao and southern USA
 - exotic fruit flies in Florida and California.
- Requires a dedicated facility for sterile insect production.
- Rear large numbers of insect eggs at a production facility.
- Irradiate insect eggs at the dose required to induce reproductive sterility.
- Hatch and distribute an overwhelming number of sterile insects over the target area.
 - increase the frequency of nonproductive matings.
- Measure the effect on population.

Proposed Sterile-Release Procedure for Channeled Apple Snails:

- Collect large numbers of snail eggs at the target site.
- Irradiate snail eggs at the dose required to induce reproductive sterility.
- Hatch irradiated snails and return the same number of sterile individuals over the target area.
 - increase the frequency of nonproductive matings.

Page -4-

• Measure the effect on population.

Possible Site for CAS Sterile-Release: Lake Lure in Alma, Georgia

- Small lake, within fifty miles from Okeefenokee Refuge, a priority for USFWS.
- Able and willing collaborators in Georgia: Department of Natural Resources, Lake Lure Homeowners Association.
- Egg masses can be sent to FDACS in Gainesville, Florida for irradiation, then returned to Lake Lure.

Alternative Site for CAS Sterile-Release: Brittle Pond in Tallahassee, Florida

Advantages:

- Water quality of the pond is important to several local organizations that may offer funding support: Leon County, Florida Department of Environmental Protection, Northwest Florida Water Management District, City of Tallahassee, and Florida Department of Transportation.
- Eggs can be collected from barrier wall within pond. The wall additionally allows masses to be easily monitored.
- Egg collection and population studies can be done by Tallahassee FDACS staff.

Conclusions:

- A sterile-release strategy for eradication has historically been limited to agricultural pests, but may be appropriate for invasive species in some cases.
- A cost-effective sterile release program for channeled apple snails could involve -
 - collecting eggs from the target site for irradiation (instead of producing them in a production facility)
 - monitoring population decline by observing egg mass production at the target site
 - targeting areas where stakeholder involvement contributes effort and support.

The Arkansas Department of Agriculture Bait and Ornamental Fish Certification Program

Andy Goodwin, University of Arkansas at Pine Bluff

- Arkansas farm gate value: \$167 million
- Second in US
- Economic impact: over \$1.2 billion
- 80% of US baitfish production

Page -5-

Arkansas Bait and Ornamental Fish Growers Association "A farm certification program can protect our farms from a fish health, economic, and public relations disaster!"

Certification Program: Industry Goals

- To prevent fish health and regulatory impacts from ANS introductions.
- To formally demonstrate the safety of their product.
- To make it easier for regulators to allow movements of farm raised baitfish.

Program Components:

- True 3rd party certification by a competent authority (Arkansas State Department of AG)
- On-site inspections
- Voluntary
- Costs paid by farmers
 - 1\$/acre/year
 - Collection \$100/hour
 - \$1000/yr in lab fees

Three Major Claims:

- 1. Freedom From Specific Diseases
- 2. Freedom From Exotic Aquatic Species
- 3. Biosecurity

Program Summary:

- Stringent
- Internationally recognized standards
- True 3rd party verification

Frequently Asked Question: How do I know that the farmers are really following program requirements?

- Third party oversight
 - Ag Department inspection On Farm
- Self-protection

Page -6-

- No way to fake disease inspection
- Malfeasance = positive = end of the world
- First AR fish health import reg.

Overview of Freshwater Aquatic Invasive Species Activities in Georgia

Keith Weaver gave a presentation on controlling the spread of invasive species through outreach, community-based research and education.

Education:

In on collaborative workshop, 12 fisheries students from UGA had the opportunity to learn first-hand about current fisheries issues in Georgia.

First, they came to the Marine Extension office to learn about pressing issues such as contaminants in seafood and invasive species.

Then, DNR biologists showed students how to capture Altamaha flatheads using electro-fishing methods. Students helped measure and weigh fish before they were released.

Community-Based Research:

Twenty-five fish were sacrificed and collected for gut content and contaminant analysis. Local volunteers helped process the fish.

At Altamaha Regional Park, recreational fishermen have joined the effort. While processing their fresh flathead catches at the park, they analyze gut contents with fisheries biologists. These interactions have been very important for gaining local perspectives as well as raising community awareness about invasive species.

Interviews with the founder and members of "The Brotherhood of Catfishermen" revealed that many fishermen would not be receptive to outreach materials that appear too one-sided (e.g. messages such as "do not release any flatheads"). In fact, this group promotes active protection of flathead resources with education campaigns such as "CPR: Catch, Photo, and Release."

However, there was an outreach message that could be agreed upon: "Either eat them or release them: never move live flatheads." In addition to preventing the spread of invasive species, this message addresses the concern that trophy fish are being removed from the wild and transported to pay ponds, sometimes across state lines.

Since members of "The Brotherhood" are passionate about not moving fish, this creates an unexpected area of common ground. Finding overlapping areas of interest between groups with different values and agendas is extremely important for successful outreach.

Page -7-

North American Brown Tree Snake Control Team Update

Bob Pitman distributed a form Expanding the Early Detection Network and Building Rapid Response Capacity. This form is to identify agency, organization, and stakeholder contacts interested in detecting brown tree snakes to prevent introduction and/or rapidly responding to sightings or reports in the Gulf Coast Region. Pitman asked that Panel members fill out the form to identify those persons to include in the network. The form is also available online at www.NABTSCT.net.

Pitman also distributed a Workshop Announcement: Early Detection of Dreissena Mussels in the West. The workshop will be held 21-22 January in Denver, Colorado. This 1½ day meeting will be hosted by the U.S. Bureau of Reclamation at their facilities within the Denver Federal Center (Lakewood) and is scheduled in association and immediately before a national-level 100th Meridian Initiative meeting (22-23 January) where a comprehensive regional monitoring plan for 2009 will be drafted. The ultimate goal for workshop participants is to provide vetted recommendations to the 100th Meridian Initiative regarding the early detection and monitoring of the dreissenid invasion of western waters.

Workshop Web Site: www.musselmonitoring.com.

Early Detection and Rapid Response for Marine (Fish) Invaders in South Florida

Time line of events:

- Developed GSARP working group at Miami Panel meeting (Fall 2007)
- Funding from NOAA, USGS, non-profit sources for workshop and field guide
- Held workshop in Marathon, Florida (June 18-19, 2008)
- 31 participants from ~25 academic and local, state, and federal governments
- 5 presentations and breakout groups
 - Early warning and detection
 - Permitting and jurisdiction
 - Rapid response
- Developed a conceptual model for ED/RR
- Developed "Field Guide to the Non-native Marine Fishes of Florida"

Page -8-

Future Efforts:

- Distribute field guide
- Hold future workshops to provide ED/RR to Caribbean Islands
- Work to develop better regional collaboration on invasives
- Provide ED/RR model for implementation.

ED/RR Events Since Workshop (June 2008):

<u>Date</u>	Species	Location
June 15	Orbicular batfish	Key Biscayne, Florida
July 6	Sailfin tang	Dania Beach, Florida
August 8	Sweetlips	Palm Beach, Florida
October 22	Pacu	Indian River Lagoon, Florida
November 23	Racoon butterfly	Palm Beach, Florida
December 6	Sailfin tang	Palm Beach, Florida

Lionfish Update:

- >15 research projects underway
- >20 organizations involved
- Bio/eco research is maturing
- Large amount of outreach
- Impacts are being realized
- Magnitude of impacts TBD.

Status of Asian Tiger Shrimp (*Penaeus monodon*):

History

- Releases from South Carolina back in 1988
- Collected from South Carolina to Florida for several years
- Then disappeared.

Page -9-

New Reports:

- 2006
 - Pamlico Sound, NC (1)
 - Mississippi Sound, Dauphin Island, AL (1)
- 2007
 - Pamlico Sound, NC (1)
 - Vermilion Bay, LA (1)
 - Fripp Island, SC (1)
- 2008 (All specimens were found in September, October, and November)
 - AL (1)
 - FL (1)
 - SC (4)
 - NC (8)

Source?

- United States?
- Accidental release in South Carolina
 - There was an escape from a mariculture facility in Bluffton, South Carolina in 1988. Approximately 1,000 adults were later recaptured as far south as Cape Canaveral, Florida (McCann et al. 1996)
- Not permitted in most states
- Caribbean?
- Large amount of anecdotal evidence of shrimp farms.

<u>Targeting New Vectors That Contribute to the Introduction and Spread of Non-native Marine</u> <u>Species</u> - Alan Power

Traditional Vectors:

- Shipping: >2/3 recent marine species introductions
- Hull Fouling: Antifoulant effectiveness; sp. resistance; protected niches; vessel speed; seasons...
- Ballast Water: 3-5 billion tonnes transferred internationally each year carrying sediment, larval species and pathogens
- Regulations: 200 miles exchange, or retained, or treated

Page -10-

- Safety exemptions; effectiveness of exchange; ship designs holding residual water; not all vessels enter U.S. from 200 nm offshore; treatment technologies still experimental and \$ costs
- Risk: Southeastern U.S. increasingly important in international shipping trade globally (container, automobile-heavy machinery, & break, breakbulk ports)

Alternative Vectors:

General public unknowingly introduce/spread marine AIS

Recreational Vessels

- Coastal Georgia counties have 37,748 registered vessels (GA DNR)
- Regional movement intracoastal waterway, and overland trailering
- Large number of transient recreational vessels pass through state
- Ramps, docks, marinas increase habitat for fouling species

Commercial Fishing Vessels

- 18-29% of vessels in Georgia waters over past 20 years from out of state
- Georgia fishing boats also travel out of state
- Species moved on vessel hulls and boat trailers, in live well, bilge and motor water, and on fishing and water sports gear.

Outreach Campaign:

- Awareness among fishermen, marina operators, and recreational boaters of AIS causes and consequences
- Encourage preventative boating practices
- Encourage reporting unusual occurrences
- Boating outreach efforts:
 - Public Service Announcement
 - Boat ramp and marine signage
 - Newspaper and magazine advertisements
 - Rack card
 - Fact sheets
 - Booklet
 - Clean Marina BMP's
 - HullHitchers.com website and keychains.

Page -11-

Mexican Strategy for Invasive Species

Roberto Mendoza gave a PowerPoint presentation on Invasive Species Mexican Strategy:

Risk Analysis and Management

- Prevention
- Monitoring
- Rapid Response
- Eradication and Control

Basic Actions

- Basic and Applied Research
- Databases Creation/Information Exchange
- Financial Support
- Education and Outreach

Transversal Actions

- Capacity Building
- Review Public Politics and Legal Frame
- Institutional Cooperation and Coordination at the Local, Regional, and International Levels.

Caribbean Pathways for Aquatic Invasive Species

Harriet Perry gave a PowerPoint presentation entitled "The Loop Current as a Vector for Connectivity of Invasive Species from the Western Atlantic to the Gulf of Mexico."

Objective: Determine invasion pathways using satellite tracked drifters.

Summary:

- Principal pathway into the Gulf of Mexico through the Caribbean is from the western equatorial region of the Atlantic.
- Of 2567 drifters deployed in the North Atlantic, 46 entered the GOM (1.8%).
- Of 46 drifters that entered the GOM, 16 crossed 200 m isobath, but only 4 crossed the basin. However, one of the 4 associated with a non-indigenous invasion.

Synopsis of Louisiana's Rapid Assessment

Marilyn Barrett-O'Leary gave an informal summary of the Barataria-Terrebonne Rapid Assessment Project.

Page -12-

Goals - Objectives:

- Secure snapshot of information about the ANS in the Barataria-Terrebonne National Estuary
 - Fishes
 - Macroinvertebrates
 - Plants
- Add to state's baseline

Preliminary Results/Findings:

- Good news: No new invasive species
- Bad news: Spread of several known species, especially giant salvinia via the GIWW and Rio Grande cichlids in the Harvey Canal.

Invasive Species Advisory Committee Update

Earl Chilton discussed the production of biofuels and steps to be addressed when considering plants for biofuels. The topic was introduced to get thoughts from the Panel on the issue and to consider if the Panel should draft recommendations on the topic in the future.

Aquatic Nuisance Species Task Force Update

James Ballard mentioned that the ANS Task Force hired a new Executive Secretary, Susan Mangin. All Panel coordinators met prior to the last Task Force meeting and discussed compiling success stories from all Panels to bring to Capitol Hill to solicit increased funding.

GSARP received two requests from the Mississippi River Basin Panel.

The first was the USFWS Triploid Grass Carp Program Review. The two specific requests to the Regional Panels were: 1) endorsement of the Triploid Program review; and 2) assistance funding the RFP. E. Chilton suggested that the Panel get more information on why they want to have another program review. Chilton mentioned that he would be attending the upcoming meeting of the Mississippi River Basin Panel and would get more information at that time. Marilyn O'Leary made a motion that Earl Chilton attend the next meeting of the Mississippi River Basin Panel and request more information on behalf of the GSARP. The motion was seconded by Leslie Hartman. The motion passed unanimously.

The next request from the Mississippi River Basin Panel (MRBP) was regarding an International Symposium on Genetic Biocontrol of Invasive Fish. The MRBP specifically requested the support of all Regional Panels in urging the Task Force to follow through on the 2006 decision to co-sponsor

Page -13-

a symposium on genetic biocontrol of invasive fish by providing the remaining \$86,000 needed for the June 2010 symposium. The GSARP decided to take no action on the request.

Current Activities of the ANSTF Research Group 2008

John Teem discussed the Research Protocol - information to guide researchers in the safe conduct of invasive species research.

Possible Improvements to Research Protocol:

The current Research Protocol describes a process by which researchers obtain approval for their invasive species research through a research review committee. However, no such committee or review process currently exists.

Options:

1. Create a research review committee and implement the current review process as described.

The ANSTF does not have regulatory authority to implement such a committee.

Each funding agency would have to agree to ANSTF oversight on safety.

Not practical - Review of all proposals submitted to all funding agencies would be costly and time-consuming.

2. Have individual funding sources require researchers to meet defined standards for conducting research safely as a prerequisite for receiving funds.

Each agency would have to define their standards and review grant proposals accordingly before approving funds.

Funding agencies may have different guidelines for safety and may or may not choose to link funding to guideline compliance.

3. Provide option guidelines for conducting research safely.

Safety guidelines are offered as information only without any requirement for compliance to obtain funding.

Examples of safety guidelines currently used for aquatic species research at various universities may be included in Research Protocol.

Page -14-

Future revisions of the Research Protocol will be based upon ANSTF feedback from the funding agency members.

Stop Aquatic Hitchhikers Brochure Update

Dennis Riecke distributed brochure revisions to the individual states displaying the individual state logos. The Panel agreed that the new GSARP logo be placed on the brochure.

Overview of 2005-2009 Strategic Plan for Work Groups

James Ballard gave a PowerPoint presentation "Current Status of Work Groups With Respect to the 2005-2009 Strategic Plan." Ballard reviewed the goals, objectives, and tasks of the Early Detection/Rapid Response, Research/Development, Education/Outreach, Pathways/Prevention, Information Management, and Eradication/Control/Restoration work groups and reported on the current status of each.

Work Group Updates to the Panel and Future Directions For All Work Groups

Early Detection and Rapid Response: The work group no longer has a Chairman; request more time to address the Strategic Plan; identified future issues of focus; and preplanning ideas for next breakout session.

Research and Development: Need for list of researchers from GSARP region; put list of researchers together with list of funding opportunities.

Education and Outreach: Completed one round of bilingual products; send contacts that can do translations; identifying outreach materials for distribution and pursue link with the Master Naturalist programs in the states; pursue link with Boy Scouts and Girl Scouts; and, work with John Teem on Rat Lung Worm Study.

Pathways and Prevention: Discussed inventory of species and prevention plans; state and federal prohibited species list; evaluate current shrimp virus issue; VHS issue discussed by Goodwin; and, review of pathways document.

Information and Management: Updating Panel website.

Eradication, Control and Restoration: Develop a definition for IPM; develop set of guidelines or guidance document that details information on different invasive plants, what can be used on them and collecting a set of case studies that illustrate how they can be used. After development, present to entire Panel for agreement.

Page -15-

White Lists/Black Lists (Restricted/Prohibited)

Chilton reported that currently Texas has only a black list. Texas is considering a white list with a possible secondary black list.

Don Schmitz volunteered to take the lead on an ad hoc committee to develop recommendations. John Teem and Dennis Riecke agreed to work with him.

Emergency Protocols for Facilities Dealing With Non-native Species

Texas - has emergency protocol in the event of a hurricane.

South Carolina - has similar protocol as Texas.

Louisiana - currently has no emergency protocols. The Mississippi River Basin Panel is developing protocols which will probably be adopted by Louisiana.

Mississippi - does not have any emergency protocols. Topic was discussed when writing their Plan.

Florida - USDA quarantine facilities have a paragraph on what to do in emergencies, and this is the only protocol Florida has at this time.

Georgia - unaware of any currently in place. Topic was discussed when writing their Plan.

The Panel discussed the possibility of developing a set of protocols for the states to adopt. Leslie Hartman and Herb Kumpf agreed to take the lead on this project. Dennis Riecke mentioned that shut down procedures when industries go out of business could be included in the protocols.

Penalties for Releasing a Non-native Species

Panel members discussed their state's penalties for violations. A suggestion was made to summarize each state's penalties and put on the GSARP website. The Panel agreed that this was not a good idea since it could enable persons to ship into state's with lesser penalties. It was noted that this information is on the individual state websites.

Other Business

The Panel discussed how states were dealing with invasive species on the property of private land owners. The possibility of funding for this was discussed in the event states were willing to work with private land owners. Don Schmitz agreed to forward a website to Panel members on funding available to private land owners to control invasive species on their property.

The Panel discussed including North Carolina on the GSARP logo.

Page -16-

It was reported that Walter Courtenay, At-Large Panel Member, has removed himself from the Panel.

The Panel discussed the membership of Marianne Cufone from the Environmental/User Group. There has been no response from her after numerous telephone calls and emails.

James Morris made a motion to replace the inactive Environmental/User Group member, Marianne Cufone, with Lad Akins from REEF. The motion was seconded by Harriet Perry.

Leslie Hartman made the suggestion that other Panel members have the opportunity to make nominations for that seat. No other names were suggested.

The Panel unanimously voted to name Lad Akins as the Environmental/User Group member of the Panel.

If financially possible, Monterrey, Mexico was suggested as the next meeting location and New Orleans, Louisiana was selected as an alternate.

Ballard will report findings to the Panel on location and date.

North Carolina - Atlantic Beach or Wilmington area - was suggested for the fall meeting.

Public Comment

Chilton provided the opportunity for public comment. No public comments were received.

There being no further business the meeting adjourned at 3:00 pm.